COMPENSATORY MITIGATION GUIDELINES FOR WYOMING

I. Objective

The intent of this guideline is to provide consistent guidance to applicants with projects which involve compensatory mitigation proposals. It is believed that this guideline will allow applicants the ability to prepare and compile adequate data and information needed to determine the acceptability of mitigation proposals. This should allow for quicker regulatory reviews as well as identification of potential problems or advantages with mitigation designs.

II. Basic Information Requirements for Mitigation Proposals

While information needs vary with mitigation designs, some basic information requirements consistently need to be addressed, regardless of the proposal. This section outlines those information needs the Wyoming Regulatory Office expects to be contained in compensatory mitigation plans. Note that additional specific information needs are to be worked out during the permit review process to ensure adequate mitigation.

1. Mitigation Goals

Mitigation design proposals need to include a text section which clearly specifies its goals. This discussion needs to include acreage, type (Cowardin classification), and function(s) of wetlands or other waters lost at the project site. It also needs to specify the particular attributes (acreage, type, vegetation, management strategy, etc.) of the mitigation design which are intended to offset the losses. If out-of-kind or off-site mitigation is proposed, justification is required.

2. Existing conditions of mitigation site

A description of the mitigation site in terms of location, size, immediate surrounding land use, historic land use, context in relation to watershed, vegetation, soils, and hydrology is required. A copy of the applicable portion of the USGS Quadrangle and/or National Wetland Inventory map with the site identified on it must be included. Aerial photography of the site is recommended but not required.

a. Delineation

- If wetlands and other waters of the U.S. are present at the mitigation site, a delineation of these areas (conducted in accordance with November 15, 1996 Wyoming Regulatory Office guidance outlining minimal information requirements for acceptable delineations under the 1987 Corps of Engineers Wetland Delineation Manual and its revisions) is required.

b. Baseline Functionality

- If the mitigation plan involves wetland restoration and/or enhancement, information demonstrating current **degradation** is required. Functional assessment models may be required to assist in pre-treatment determinations as well as predict and measure final results and goals. Preservation, an option of last resort, will require a detailed site assessment as well as justification of imminent development.

3. Design of Mitigation Site

a. Drawings

i. Scaled plan view drawings

- full size and reduced sized copies

- no smaller than 1" = 400,' however, 1" = 100" preferred

- existing and proposed topography at a scale from which accurate determinations relative to hydrology and vegetative community can be readily discerned (see cross sections below). One foot contours are recommended.

- existing wetland and other waters delineation boundaries clearly identified

- spoil disposal areas

- anticipated wetland cover type (Cowardin et. al.) identified

- soil erosion and sediment control features identified

- location of cross sections

- location of monitoring transect(s) and permanent photo locations, vegetation sampling plots, piezometers or other hydrology data collection points, etc.

ii. Scaled cross sections

- show existing and proposed ground surfaces with elevations indicated. Placed topsoil depths must be specified.

- ordinary high water elevation and anticipated groundwater levels.

- width, depth, and bottom elevations of water supply ditches and top elevations and widths of berms, dams, etc.

b. Other treatments

i. Soils handling

- wetland soils at the impact site should be transported to the mitigation site for placement. Stockpiling and timing of placement of topsoil materials must be included.

ii. Vegetation planting

- For seed mixes, designate species composition, pounds per acre, wetland indicator status, and seed source. For use of saplings, sprigs, plugs, mats, etc., identify species composition, wetland indicator status, spacing, and total numbers per species. Timing of planting must be specified.

c. Hydrology

Adequate and reliable hydrology at the mitigation site is essential for success. Baseline data supporting proposed water supply of a mitigation site is required. The two basic categories of water supply for mitigation sites typically used in Wyoming are passive and managed. Basic hydrology information needs include:

i. Passive

- This water supply is dependent on natural groundwater fluctuations or and/or overbank flooding with no human management techniques. Groundwater supported mitigation designs need to be correlated to site specific data gathered from the use of piezometers, soils, spring flow data, and/or other site investigation data. Much of this information can be gathered during a delineation of the site. Although several years of groundwater data is preferred, measurement of an average year's peak groundwater level is acceptable. Occasionally, site specific soils data can be used as a surrogate for this data element.

- Data is also required to document and justify overbank flooding. This typically involves detailed surveying as well as hydrologic modeling. The anticipated frequency and duration of flooding needs to be specified.

- If the mitigation area is to be supported by precipitation, a water budget will be required including identification of anticipated run off volumes and evaporation rates.

ii. Managed

- This water supply is a controlled supply system (diversions, canals, ditches, etc.) and typically incorporates the use of impoundment features (berms, dams, dikes, etc.) with water control structures. This is the least preferred hydrology supply option due to the continual need for human activity to ensure adequate supply to the mitigation site as well as long-term maintenance.

- Construction plans and cross sections (see Section 3a) are needed for water supply elements as well as impoundment features.

- Water rights - Mitigation sites typically require an adjudicated water right. Demonstration of the right's availability and priority need to accompany the mitigation proposal for managed hydrology systems.

- A water management plan. Dates of initial inundation, draw down, and re-inundation (if proposed) must be specified. The responsible party to operate and maintain the site needs to be identified.

4. Monitoring

Section 404 permits typically require monitoring of the mitigation area as a condition with the submission of annual reports. Monitoring and report compilation must be accomplished by a qualified individual with experience in wetland mitigation. Annual reports for a period of 3 to 5 years is the normal period for monitoring, although longer periods may be required.

a. Success Criteria/Performance Standards

- Success criteria are typically correlated to the impacted wetland site(s) based on species composition and cover types. However, site availability, practicability, and other overriding environmental goals, such as threatened and endangered species habitat opportunities, can result in mitigation success criteria that is not correlated to the impact site. Construction of mitigation areas should be built prior to or concurrently with the loss of aquatic resources. The resulting mitigation areas must meet 1987 Corps of Engineers Delineation Manual criteria to be considered as wetlands.

b. Sampling protocols

- Sampling protocols and intensity for all three parameters (vegetation, soils, and hydrology) must be explicitly described in the mitigation proposal.

- Vegetation. Transect with quadrat sampling (preferred), point intercept, and other forms of vegetation assessment are acceptable. Total cover and relative cover per species is required and is to be correlated to impact wetland data, where possible. Adequate sampling intensity must be accomplished to demonstrate that proposed wetland mitigation acreage has been achieved. Agreement to a weed control plan needs to be included with a list of undesirable species (state or county weed lists) that will be managed if they comprise more than 20% of a sample area.

- Hydrology. Excavation of test pits or use of piezometers to determine groundwater levels is required. Use of staff gages in areas designed to be flooded, even

intermittently, must be included. Frequency of site visit(s) must be stipulated. Monitoring is to be done during the known or projected peak of the hydrograph and/or seasonal high groundwater. Documentation of low water period elevations may also be required.

- Soils. Excavation of soil pits and examination for redoximorphic features is required. Soil profile data is to be logged with depth of features found. While hydric soil indicators may not become evident within the required monitoring period, demonstration of how hydric soil conditions are concluded as being present or absent needs to be stated.

c. Report content

- Reports must clearly identify success criteria and how the mitigation site compares to those criteria. Reports need to include a comparison of actual wetland mitigation acreage to proposed acreage as well to project impact acreage. Mitigation areas need to be broken down based on type (Cowardin classification). Reports need to include author's interpretation of data and discussion as to how mitigation is determined to be demonstrating success or failure. Problems that arise need to be identified in the reports as well as corrective measures that have been implemented or proposed. Corrective actions need to be coordinated with the Corps prior to implementation.

- Routine wetland delineation data forms, or similar Corps-approved forms which contain appropriate data fields.

- Plan view map (see section 3ai above)

- Color photos of mitigation site from permanently established locations.

III. Additional Information Requirements

While this guideline attempts to establish basic information requirements anticipated with typical wetland mitigation design proposals, more extensive data and information may be required, at the Corps' discretion, to ensure that regulatory requirements are complied with. Below are some additional items that may be required with mitigation plans. This is not an exhaustive list.

a. Contingency Plans

- It is not unusual for wetland mitigation plans to be unsuccessful. Depending on the mitigation design as well as problems that arise with mitigation site construction, formulation of a contingency plan may be required. This can include abandonment of the mitigation site and new construction at another site.

b. Deed Restrictions/Conservation Easements

- While not a mandatory item, it is not unusual for some form of easement to be placed on the mitigation site to ensure its long-term survivability. These instruments are not required for mitigation sites on Federal lands.

c. Performance Bonds

- To ensure that mitigation is accomplished that meets objectives and goals, the Corps can require that performance bonds be posted.